

1. (Cancelled)

2. (Cancelled)

3. (Cancelled)

4. (Cancelled)

5. (Cancelled)

6. (Cancelled)

7. (Cancelled)

8. (Currently Amended) A two-stage amplifier that provides a two-stage amplifier output signal, the said-two-stage amplifier comprising:

 a first amplifier stage that receives a first amplifier input signal, and provides a first amplifier output signal;

 a second amplifier stage that includes a second amplifier input lead, and provides the two-stage amplifier output signal;

 a coupling capacitor having a first lead and a second lead, wherein the said-first lead receives the said-first amplifier output signal, and the said-second lead is connected to the said

second amplifier input lead such that the said-coupling capacitor is connected in series between the said-first and second amplifier stages; and

means for generating a bias voltage that is applied to the said-coupling capacitor to maintain the voltage across the said-coupling capacitor constant, wherein

the said-two-stage amplifier output signal is feedback and coupled to an input signal to provide the said-first amplifier input signal.

9. (Currently Amended) The two-stage amplifier of claim 8, further comprising an integrated voltage source that provides a reference voltage to the said-means for generating.

10. (Currently Amended) The two-stage amplifier of claim 9, wherein the said-means for generating provides the said-bias voltage to maintain a fixed ratio between the said-reference voltage and the said-first amplifier input signal.

11. (Currently Amended) The two-stage amplifier of 8, wherein the said-first amplifier stage includes a transconductance amplifier.

12. (Currently Amended) The two-stage amplifier of claim 11, further comprising a compensation capacitor that is connected electrically parallel to the input of the said-second amplifier stage.

13. (Currently Amended) The two-stage amplifier of claim 11, wherein the said-means for generating a said-bias voltage comprises:

a pump generator that is responsive to a reference signal and a clock signal, and provides a first clock pulse on a first pump generator output lead and a second pump clock pulse on a second pump generator output lead;

a first capacitor having a third lead and a fourth lead, wherein ~~the said~~ third lead is connected to ~~the said~~ first pump generator output lead;

a second capacitor having a fifth lead and a sixth lead, wherein ~~the said~~ fifth lead is connected to ~~the said~~ second pump generator output lead; and

a switching element that is coupled to ~~the said~~ fourth lead and ~~the said~~ sixth lead and provides a first pump current to ~~the said~~ first lead and a second pump current to ~~the said~~ second lead.

14. (Currently Amended) The two-stage amplifier of claim 12, wherein the value of ~~the said~~ coupling capacitor is less than the value of ~~the said~~ compensation capacitor.

15. (Currently Amended) A two-stage amplifier that provides a two-stage amplifier output signal, ~~the said~~ two-stage amplifier comprising:

a first amplifier stage that receives a first amplifier input signal, and provides a first amplifier output signal;

a second amplifier stage that includes a second amplifier input, and provides the two-stage amplifier output signal;

a coupling capacitor having a first lead and a second lead, wherein ~~the said~~ first lead receives ~~the said~~ first amplifier output signal, and ~~the said~~ second lead is connected to ~~the said~~ second amplifier input lead such that ~~the said~~ coupling capacitor is connected in series between ~~the said~~ first and second amplifier stages;

a charge pump that generates a bias voltage that is applied to ~~the said~~-coupling capacitor to maintain the time average of the voltage across ~~the said~~-coupling capacitor constant; and
a voltage source that provides a reference voltage to ~~the said~~-charge pump,
wherein ~~the said~~-charge pump includes means for generating a ~~said~~-bias voltage to maintain a fixed ratio between ~~the said~~-reference voltage and ~~the said~~-first amplifier input signal.

16. (Currently Amended) The two-stage amplifier of claim 15, further comprising a compensation capacitor that is connected electrically parallel to the input of ~~the said~~-second amplifier stage.

17. (Currently Amended) The two-stage amplifier of claim 15, wherein ~~the said~~-two-stage amplifier output signal is feedback ~~feedback~~ and coupled to an input signal to provide ~~the said~~ first amplifier input signal.

18. (Currently Amended) The two-stage amplifier of claim 16, wherein the value of ~~the said~~ coupling capacitor is less than the value of ~~the said~~-compensation capacitor.

19. (Currently Amended) A two-stage amplifier that provides a two-stage amplifier output signal, ~~the said~~-two-stage amplifier comprising:

a first amplifier stage that receives a first amplifier input signal, and provides a first amplifier output signal;

a second amplifier stage that includes a second amplifier input lead, and provides the two-stage amplifier output signal;

a coupling capacitor having a first lead and a second lead, wherein ~~the said~~-first lead receives ~~the said~~-first amplifier output signal, and ~~the said~~-second lead is connected to ~~the said~~

second amplifier input lead such that ~~the said~~ coupling capacitor is connected in series between ~~the said~~ first and second amplifier stages; and

a charge pump coupled to the first and second leads of the ~~said~~ coupling capacitor ~~via~~ ~~said~~ to maintain the voltage across ~~the said~~ coupling capacitor constant.

20. (Currently Amended) The two-stage amplifier of 19, further comprising a compensation capacitor that is connected electrically in parallel to the input of ~~the said~~ second amplifier stage.

21. (Currently Amended) The two-stage amplifier of claim 19, wherein ~~the said~~ charge pump comprises:

a pump generator that is responsive to a reference signal and a clock signal, and provides a first clock pulse on a first pump generator output lead and a second pump clock pulse on a second pump generator output lead;

a first capacitor having a third lead and a fourth lead, wherein ~~the said~~ third lead is connected to ~~the first~~ pump generator output lead;

a second capacitor having a fifth lead and a sixth lead, wherein ~~the said~~ fifth lead is connected to ~~the said~~ second pump generator output lead; and

a switching element that is coupled to ~~the said~~ fourth lead and ~~the said~~ sixth lead and provides a first pump current to ~~the said~~ first lead and a second pump current to ~~the said~~ second lead.

22. (Currently Amended) The two-stage amplifier of claim 20, wherein the value of ~~the said~~ coupling capacitor is less than the value of ~~the said~~ compensation capacitor.

23. (Currently Amended) The two-stage amplifier of claim 19, further comprising an integrated voltage source that provides a reference voltage to the said-charge pump.

24. (Currently Amended) The two-stage amplifier of claim 19, wherein the said-charge pump includes means for generating a said-bias voltage to maintain a fixed ratio between the said reference voltage and the said-first amplifier input signal.

25. (Currently Amended) The two-stage amplifier of claim 19, wherein the said-two-stage amplifier output signal is fedback ~~feedback~~ and coupled to an input signal to provide the said first amplifier input signal.

26. (Currently Amended) The two-stage amplifier of claim 25, wherein current flows from the said-first amplifier stage, until the value of the said-input signal is equal to zero.